ENVIRONMENTAL Fact Sheet

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

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NH Salt Marsh Restoration: Awcomin Salt Marsh, Rye NH

Year of Project: 2001-2003
Type of Project: Fill Removal/invasive Species Control, Hydrologic Restoration
Primary Project Partners: Town of Rye, Natural Resources Conservation Service, NH Coastal Program
Contractor: Northeast Wetland Restoration
Type of Monitoring: Post-Restoration & Reference

Location: Awcomin Marsh is located on Route 1A in Rye, directly across from Rye Harbor Marina and just south of Rye Harbor State Park.

Background: The Awcomin Marsh restoration project began in November 2001 and aimed to restore 30 acres of salt marsh. During the scope of this project, fill was removed, appropriate marsh elevations were reestablished, and a new tidal creek system was created.

The Issues:

Dredge Spoils and Improper Marsh Elevations. In 1941, and again in 1962, dredge spoils from the maintenance of Rye Harbor were placed directly on approximately 35 acres of the surface of the marsh. The 1941 spoils were allowed to cover the entire 35-acre area with approximately 12-20 inches (almost two feet) of material. The 1962 spoils were placed directly over the 1941 filling and were contained to an area of approximately 15 acres in size, resulting in fill placements of varying depths from 3-6 feet above the original marsh surface, with an average depth of 3.5 feet.

Upland and Invasive Species Replacing Native Salt Marsh Plants. Prior to restoration, the vegetation in this portion of Awcomin Marsh consisted of three communities. Existing only in the 1962 fill area, approximately 8 acres of the site had growing conditions conducive for the existence of a wooded upland community predominantly vegetated with trembling aspen *(Populous tremuloides)*. Within the north and northeast portions of the 1941 fill area, approximately 8 acres of high marsh vegetation existed, which was predominantly vegetated by hay grass *(Spartina patens)*.

Invasive Common Reed (Phragmites australis)

The remaining 19 acres of the site was vegetated by a fresh-brackish emergent mixture predominantly vegetated by the invasive common reed *(Phragmites australis)* with small isolated stands of narrow leafed cattail *(Typha angustifolia)* and slough grass *(Spartina pectinata).*

Inadequate Open Water Habitat. Since there was approximately three feet of fill on Awcomin Marsh for the last 40-60 years, the original tidal creek channels, pools and pannes were no longer part of the marsh. This resulted in the loss of open water on the marsh surface, which is critical for black ducks, wading birds, shorebirds, and fish, including those that eat mosquito larvae.

Project Goals:

- Remove dredge spoils from the marsh.
- Restore appropriate salt marsh elevations.
- Create a new tidal creek system and open water habitat such as pools and pannes.

Restoration:

Natural revegetation of Awcomin Marsh occurring around restored pools and pannes.

A team of marsh experts and engineers created a design that set an appropriate marsh elevation at 4.5 NGVD. This target elevation would assure that invasive species do not become a problem before the site revegetates with native marsh grasses. A system of creeks created to provide full tidal flushing of the marsh. The creeks were sized to accommodate the expected flows to the new marsh acreage. A main creek channel was dug allowing adequate water flow to be received by portions of the marsh that have been revegetated. A series of pools and pannes were also created. Fill removed from the marsh consisted of a top (organic) layer consisting of Phragmites rhizomes, and a layer of inorganic loam. The total amount removed was approximately 100,000 cubic yards and has been disposed of off-site.

Awcomin Marsh, as seen in aerial view in 2004

The community has been involved in planting some areas, however, the bulk of revegetation will be natural and may take up to five years to happen. In the summer of 2002, approximately 30 volunteers, scientists and resource managers worked together to re-vegetate Awcomin Marsh with native plants. The University of New Hampshire's Jackson Estuarine Laboratory spearheaded this revegetation effort. Volunteers not only helped restore this marsh back to its native state, but also learned about current restoration methods. Though some areas were revegetated with the help of volunteers, much of the marsh is seeing natural revegetation by pioneer salt marsh plants such as common glasswort (Salicornia europaea) and Atlantic sea blite (Sueda linearis).

In addition, two passive recreational trails have been established with viewing platforms and interpretive signage at the end of each

Other Project Partners:

Other partners in this project have included the US Environmental Protection Agency (EPA), National Oceanic Atmospheric Admin. (NOAA), Ducks Unlimited (DU), U.S. Army Corps of Engineers (ACOE), NH Department of Resources and Economic Development (DRED), and NH Department of Environmental Services (DES).

Funding the Project:

EPA, $450,000; NOAA, $130,000; NRCS, $98,000; Town of Rye, $52,000; NHCP, $25,000, Ducks Unlimited, $5,000 for a total project cost of **$760,000**.

For Additional Information:

Re-Vegetation Efforts

"Save Our Salt Marshes" - Portsmouth Herald Article
(June 29, 2002)

"Volunteers Restore Healthy Plants to Salt Marsh" Union Leader Article
(June 27, 2002)

"Wild Places: Awcomin Marsh" NH Fish & Game Department's "Wildlife Journal" Article
(Mar/April 2004)